

WHAT IS CLAIMED IS:

1. An ultrasonic operating apparatus comprising:
an elongate insert portion capable of being
inserted into a body cavity;

5 an operating portion located on a distal end
portion of the insert portion, the operating portion
being used to operate an organism tissue;

 a handling portion coupled to a proximal end
portion of said insert portion, the handling portion
10 having therein an ultrasonic vibrator capable of
generating ultrasonic vibration;

 a covering tube located around said insert
portion;

 a vibration transmitting member passed through the
15 covering tube, the vibration transmitting member having
an ultrasonic probe on a side of said operating portion
and capable of transmitting the ultrasonic vibration
from said ultrasonic vibrator to said ultrasonic probe;

 a jaw rockably supported opposite said ultrasonic
20 probe and capable of seizing the organism tissue in
conjunction with said ultrasonic probe;

 a control handle located in said handling portion
and capable of opening and closing said jaw with
respect to said ultrasonic probe; and

25 a handling force transmitting member coupling
said jaw and said control handle, and capable of
transmitting handling force from said control handle to

said jaw,

said jaw including a frame-shaped jaw body having at least supporting arms arranged individually on the opposite sides of a slot extending in an axial direction of said insert portion, a tip capable of
5 seizing the organism tissue in conjunction with said ultrasonic probe, and a joint portion removably coupling said tip between said supporting arms of said jaw body.

10 2. An ultrasonic operating apparatus according to claim 1, wherein said ultrasonic probe has an asymmetric curved portion curved with respect to a central axis of said insert portion.

15 3. An ultrasonic operating apparatus according to claim 2, wherein said curved portion is formed symmetrically with respect to a direction in which said jaw is opened or closed.

20 4. An ultrasonic operating apparatus according to claim 1, wherein said jaw body is designed so that support shaft portions of said tip protrude inward from the respective distal end portions of said two supporting arms, and said tip has mounting holes into which said support shaft portions are removably
25 inserted and guide grooves for guiding said support shaft portions to said mounting holes as said tip is attached to said jaw body, said guide grooves individually having taper surfaces for movement such

that the space between the respective support shaft portions of said two supporting arms widens toward said mounting holes and click step portions for preventing said support shaft portions from slipping out of said mounting holes.

5 5. A tool for changing a tip of an ultrasonic operating apparatus, comprising:

 a tip changing tool body having an insertion hole into which a distal operating portion of said ultrasonic operating apparatus is inserted and
10 a stopper portion for being the position of insertion of said distal operating portion inserted in the insertion hole;

 a handling arm coupled to said tool body so as to be rockable around a hinge portion located on the inlet
15 side of said insertion hole of the tool body; and

 wedge-shaped separating portions adapted to be removably inserted into spaces between the tip for seizing an organism tissue and supporting arms on the opposite sides of a jaw body of said distal operating
20 portion as the handling arm rocks, thereby moving said supporting arms in a direction such that indented fitting portions of said supporting arms and said tip are disengaged from one another.

25 6. A ultrasonic operating apparatus comprising:
 a vibrator for generating ultrasonic vibration;
 a probe removably mounted on the vibrator, the

probe having an allowance portion for transmitting ultrasonic vibration from the vibrator to a distal end portion and for treating an organism tissue at the distal end portion with a ultrasonic wave; and

5 a distal end acting portion mounted to be detachable from the allowance portion, the distal end acting portion having a seizing portion for seizing the organism tissue between the seizing portion and the allowance portion; and

10 locking means for engagingly locking the seizing portion to be disengageable from the distal end acting portion, the locking means being capable of removing the seizing portion assembled with the distal end acting portion by using a dedicated tool.

15 7. A ultrasonic operating apparatus of claim 6, wherein the locking means has: a locking portion which utilizes elastic deformation for at least one of the distal end acting portion and the seizing portion; and a mechanism for locking both of the distal end acting
20 portion and the seizing portion by means of the locking portion and for suppressing the elastic deformation in an locked state.

 8. A ultrasonic operating apparatus of claim 6, wherein the seizing portion is released from the locked
25 state by means of the dedicated tool.

 9. A ultrasonic operating apparatus system comprising:

a vibrator unit having a ultrasonic vibrator for generating ultrasonic vibration;

5 a probe unit which comprises an elongated vibration transmitting member having a proximal end portion removably connected to the ultrasonic vibrator and a distal end portion at which a distal end allowance portion is arranged, the probe unit transmitting the ultrasonic vibration generated by means of the ultrasonic vibrator to the distal end
10 allowance portion;

a handle unit removably coupled with a handling portion unit having a seizing member supported to be detachable from the distal end handling portion, the handle unit being adopted to operate the seizing member
15 for the distal end allowance portion;

a ultrasonic operating apparatus main body with which the vibrator unit, the probe unit, and the handle unit are removably assembled;

20 a probe unit replacing member assembled to be replaceable with the probe unit with respect to the ultrasonic operating apparatus main body, the member having the distal end allowance portion in shape different from the probe unit; and

25 an operating unit replacing member assembled to be replaceable with the operating unit with respect to the ultrasonic apparatus main body, the member having the seizing member in shape corresponding to a distal end

allowance portion of the probe unit replacing member,
wherein corresponding parts between the probe unit
replacing member and the operating unit replacing
member can be selectively mounted on the ultrasonic
operating apparatus main body properly.

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10. A ultrasonic operating apparatus system of
claim 9, wherein the handle unit has a first handle on
a stationary side and a second handle turnably mounted
on the first handle, the vibrator unit and the probe
unit are coupled with the first handle, respectively,
and the operating unit is coupled with the second
handle.

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11. A ultrasonic operating apparatus system of
claim 9, wherein the handle unit has:

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an operating portion for an operator to make
operation;

an insert sheath portion having an elongated
covering tube mounted on the operating portion; and

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a distal end acting portion provided at a distal
end of the insert sheath portion, the acting portion
acting according to operation of the operating portion.